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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,310	11/30/2001	Jim Bender	JB-301	2182

7590

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EXAMINER

HOEY, BETSEY MORRISON

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/007,310

Applicant(s)

BENDER, JIM

Examiner

HOEY, BETSEY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The drawings are objected to because the labeling is not uniform (appears to be handwritten). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, "the UV reactor" and "the oxidizing species" lack antecedent basis. In claim 4, "the oxidation of water matrix" lacks antecedent basis. In claim 1, there is also a lack of nexus between the electromagnetic radiator and the UV reactor. Claims 4 and 11 appear to recite method steps, but are dependent on a system claim and do not limit the structure of the system (see MPEP §2114). In claim 12, "the...main filter membrane" lacks antecedent basis. In claim 19, "the electromagnetic energy" lacks antecedent basis. Care should be given to use consistent terminology in the claims, and to provide antecedent basis whenever "the" or "said" is used as an article before an object of a limitation in the claims. The claims not mentioned as having specific errors are rejected because they depend on either claim 1 or claim 12.

4. Claims 1-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

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5. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, because the prior art of record fails to teach, disclose, or fairly suggest a system with enhanced water flux through a filter membrane comprising an electromagnetic radiator capable of producing high-power, pulsed blackbody, deep-ultraviolet radiation; a UV reactor having a fluid inlet, fluid outlet, and at least one treatment chamber; an a filtration membrane disposed adjacent the electromagnetic radiator to filter the irradiated water; wherein the system elements are arranged such that treatment, as described in claim 1, reduces transmembrane pressure. It is submitted that while other systems for water treatment comprise the combination of UV reactor(s) and membrane filters, the prior art of record does not obviate instant claims 1-11 because the prior art of record fails to recognize the advantages of including an electromagnetic radiator capable of producing high-power, pulsed blackbody, deep-ultraviolet radiation. Pages 9-10 of the instant specification describe the advantages an electromagnetic radiator capable of producing high-power, pulsed blackbody, deep-ultraviolet radiation has over conventional mercury UV lamps in a filter membrane system.

Claims 12-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, because the prior art of record fails to teach, disclose, or fairly suggest a method for enhancing water flux through a hollow-type filter membrane comprising exposing water to be filtered to pulsed blackbody, deep-

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ultraviolet electromagnetic radiation prior to purifying the water with the filtration, in order to prevent fouling of the membrane by organic molecules, metal ions, or complexed minerals. It is submitted that while other methods for water treatment comprise the combination of UV radiation and membrane filtration, the prior art of record does not obviate instant claims 1-11 because the prior art of record fails to recognize the advantages of including a step of exposing water to be filtered to pulsed blackbody, deep-ultraviolet electromagnetic radiation prior to filtration. Pages 9-10 of the instant specification describe the advantages of this step over conventional radiation by mercury UV lamps in a filter membrane system.

6. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsey Hoey whose telephone number is (703) 305-3934. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6:00 PM, and on alternate Fridays from 8:30 AM to 5:00 PM.

The fax phone number for official after final faxes for this Group is 703-872-9311 for all other official faxes the number is 703-872-9310, and for unofficial faxes the number is (703) 305-7115. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Betsey M. Hoey
BETSEY MORRISON HOEY
PRIMARY EXAMINER

May 29, 2003